

Title (en)

Thin film solar cell including a spatially modulated intrinsic layer.

Title (de)

Dünnschichtsolarzelle mit räumlich modulierter intrinsischer Schicht.

Title (fr)

Cellule solaire à couche mince ayant une couche intrinsèque modulée dans l'espace.

Publication

**EP 0304145 A2 19890222 (EN)**

Application

**EP 88304307 A 19880512**

Priority

US 8726487 A 19870819

Abstract (en)

One or more thin film solar cells (10) in which the intrinsic layer (18) of substantially amorphous semiconductor alloy material thereof includes at least a first bandgap portion and a narrower bandgap portion. The bandgap of the intrinsic layer is spatially graded through a portion of the bulk thickness, said graded portion including a region removed from the intrinsic layer-dopant layer (16, 20) interfaces. The bandgap of the intrinsic layer is always less than the bandgap of the doped layers. The gradation of the intrinsic layer is effected such that the open circuit voltage and/or the fill factor of the one or plural solar cell structure is enhanced.

IPC 1-7

**H01L 31/06**

IPC 8 full level

**H01L 31/04** (2006.01); **B22F 9/02** (2006.01); **H01F 1/04** (2006.01); **H01F 1/057** (2006.01); **H01L 31/065** (2012.01); **H01L 31/075** (2012.01); **H01L 31/20** (2006.01)

CPC (source: EP KR US)

**B22F 9/023** (2013.01 - EP US); **H01F 1/0571** (2013.01 - EP US); **H01F 1/0573** (2013.01 - EP US); **H01L 27/14** (2013.01 - KR); **H01L 31/065** (2013.01 - EP US); **H01L 31/075** (2013.01 - EP US); **H01L 31/076** (2013.01 - EP US); **H01L 31/204** (2013.01 - EP US); **Y02E 10/548** (2013.01 - EP US); **Y02P 70/50** (2015.11 - EP US)

Cited by

EP2546667A1; DE3906345A1; EP0566972A1; EP0487114A3; EP0500067A3; US5279681A; EP0609104A3; US5589007A; EP0600630A1; US5563075A; CN104393087A; TWI470818B

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DOCDB simple family (application)

**EP 88304307 A 19880512**; AT 88304307 T 19880512; CA 567498 A 19880524; CN 88106077 A 19880816; DE 3854773 T 19880512; ES 88304307 T 19880512; JP 20564288 A 19880818; KR 880010090 A 19880808; US 8726487 A 19870819